

STATE OF SOUTH CAROLINA
BEFORE THE PUBLIC SERVICE COMMISSION
DOCKET NO. 2018-2-E

In re: Annual Review of Base Rates
for Fuel Costs for South Carolina
Electric & Gas Company

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**CCL AND SACE’S PROPOSED
ORDER**

I. INTRODUCTION

This matter comes before the Public Service Commission of South Carolina (“Commission”) on the annual review of the fuel purchasing practices and policies of South Carolina Electric & Gas Company (“SCE&G” or “Company”) for a determination as to whether any adjustment in the fuel cost recovery factors is necessary and reasonable. The procedure followed by the Commission in this proceeding is set forth in S.C. Code Ann. § 58-27-865 (2015). Additionally, and pursuant to S.C. Code Ann. § 58-39-140 (2015), the Commission must determine in this proceeding whether an increase or decrease should be granted in the fuel cost component designed to recover the incremental and avoided costs incurred by the Company to implement the Distributed Energy Resource (“DER”) program previously approved by the Commission. The Company further seeks approval for its (1) proposed avoided cost rates and methodology under the Public Utility Regulatory Policies Act of 1978¹ (“PURPA”), (2) proposed PR-1 and PR-2 avoided cost tariff updates, and (3) proposed 2018 update to calculations under

¹ Public Utility Regulatory Policies Act of 1978, Pub. L. No. 95-617, 92 Stat. 3117 (codified as amended in scattered sections of 15, 16, 42, and 43 U.S.C.A.) (PURPA).

the NEM Methodology approved in Commission Order No. 2015-194. The period under review in this Docket is January 1, 2017, through December 31, 2017 (“Review Period”).

A. Notice and Intervention

By letter dated October 4, 2017, the Clerk’s Office of the Commission instructed the Company to publish a Notice of Hearing and Prefile Testimony Deadlines (“Notice”) in newspapers of general circulation by January 5, 2018. The letter also instructed the Company to furnish the notice to its affected customers by U.S. mail, or by electronic mail to customers who have agreed to receive notice by electronic mail, by January 5, 2018. The Notice indicated the nature of the proceeding and advised all parties desiring participation in the scheduled proceeding of the manner and time in which to file appropriate pleadings. On December 5, 2017, the Company filed affidavits demonstrating that the Notice was duly published in accordance with the instructions set forth in the October 4, 2017 letter. On December 15, 2017, the Company filed an affidavit demonstrating that the Notice was appropriately furnished to each affected customer.

Petitions to Intervene were received from the South Carolina Energy Users Committee (“SCEUC”), the South Carolina Coastal Conservation League (“CCL”), the Southern Alliance for Clean Energy (“SACE”), the South Carolina Solar Business Alliance, LLC (“SBA”), Southern Current, LLC (“Southern Current”), and CMC Steel South Carolina (“CMC Steel”). The Petitions to Intervene of SCEUC, CCL, SACE, SBA, Southern Current, and CMC Steel were not opposed by SCE&G and no other parties sought to intervene in this proceeding. The South Carolina Office of Regulatory Staff (“ORS”) is automatically a party pursuant to S.C. Code Ann. § 58-4-10(B) (2015).

II. STATUTORY STANDARDS

S.C. Code Ann. § 58-3-140(A) vests the Commission with the “power and jurisdiction to supervise and regulate the rates and service of every public utility in this State . . .” Every rate “made, demanded or received by any electrical utility . . . shall be just and reasonable . . .” S.C. Code Ann. § 58-27-810 (Supp. 2015).

A. Fuel Cost Recovery under S.C. Code Ann. § 58-27-865

The procedure followed by the Commission in this proceeding is set forth in S.C. Code Ann. § 58-27-865. S.C. Code Ann. § 58-27-865(B) states in pertinent part that, “[u]pon conducting public hearings in accordance with law, the [C]ommission shall direct each company to place in effect in its base rate an amount designated to recover, during the succeeding twelve months, the fuel costs determined by the [C]ommission to be appropriate for that period, adjusted for the over-recovery or under-recovery from the preceding twelve-month period.”

B. Recovery of Incremental and Avoided Costs of DER Programs under S.C. Code Ann. § 58-27-865

In addition to fuel costs, S.C. Code Ann. § 58-27-865 further provides for review and recovery of “incremental and avoided costs of distributed energy resource programs and net metering as authorized and approved under Chapters 39 and 40, Title 58[, which] shall be allocated and recovered from customers under a separate distributed energy component of the overall fuel factor that shall be allocated and recovered based on the same method that is used by the utility to allocate and recover variable environmental costs.” S.C. Code Ann. § 58-27-865(A)(1) (Supp. 2015). Incremental DER program costs are “all reasonable and prudent costs incurred by an electrical utility to implement a distributed energy resource program pursuant to Section 58-39-130 of Chapter 39, the

S.C. Distributed Energy Resource Act.” Recoverable incremental costs are capped in S.C. Code Ann. § 58-39-150 “[f]or the protection of consumers and to ensure that the cost of DER programs do not exceed a reasonable threshold.”

The DER incremental program costs include reasonable and prudent costs related to net energy metering (“NEM”) and the Methodology for valuing distributed generation NEM resources approved in Commission Order 2015-194. Pursuant to the NEM Settlement Agreement approved previously by this Commission in Order No. 2015-194, Docket No. 2014-246-E, the Company must compute and update annually the “costs and benefits of net metering and the required amount of the DER NEM Incentive” coincident in time with the utility’s filing under the fuel clause. Order 2015-194 at p. 22, para. (g).

The NEM Methodology approved in Order No. 2015-194 included the following eleven components:

- +/- Avoided Energy
- +/- Energy Losses/Line Losses
- +/- Avoided Capacity
- +/- Ancillary Services
- +/- T&D Capacity
- +/- Avoided Criteria Pollutants
- +/- Avoided CO₂ Emissions Cost
- +/- Fuel Hedge
- +/- Utility Integration & Interconnection Costs
- +/- Utility Administration Costs
- +/- Environmental Costs
- = Total Value of NEM Distributed Energy Resource

Each component in the methodology is accompanied by a description and guidelines for calculating the component. For example, “avoided capacity” is defined as the increase or reduction in fixed costs to the utility “of building and maintaining new conventional generation resources associated with the adoption of NEM.” Some components may be used as placeholders “where there is currently a lack of capability to

accurately quantify a particular category and/or a lack of cost or benefit to the Utility system.” Order 2015-194 at p. 20, para. (e), Ex. 1 at p. 4, para. 8. Placeholder categories are to be “updated and included in the calculation of costs and benefits of net metering if and when capabilities to reasonably quantify those values and quantifiable costs or benefits to the Utility system in such categories become available.” *Id.*

C. Recovery of PURPA Section 210 Avoided Costs under S.C. Code Ann. § 58-27-865

S.C. Code Ann. § 58-27-865 was amended by Act 236 to clarify that “‘fuel costs related to purchased power’, as used in subsection (A)(1) shall include . . . avoided costs under the Public Utility Regulatory Policy Act of 1978, also known as PURPA.” S.C. Code Ann. § 58-27-865(A)(2) (Supp. 2015). Historically, SCE&G’s PURPA avoided cost rates have been filed in Commission Docket No. 1995-1192-E; however, subsequent to Act 236 and the fuel clause revisions, SCE&G is seeking approval in the fuel cost proceeding for its avoided cost rates and methodology under Section 210 of the Public Utility Regulatory Policies Act of 1978, 16 U.S.C.A. § 824a-3. Section 210 of PURPA and relevant regulations promulgated by the Federal Energy Regulatory Commission (“FERC”)² prescribe the responsibilities of FERC and of state regulatory authorities, such as this Commission, relating to the development of cogeneration and small power production. Section 210 of PURPA requires FERC to prescribe such rules as it determines necessary to encourage cogeneration and small power production, including rules requiring electric utilities to purchase electric power from, and to sell electric power to, cogeneration and small power production facilities. Under Section 210 of PURPA, cogeneration facilities and small power production facilities that meet certain standards

² FERC Stats. & Regs. 30,128 (1980) in Docket No. RM79-55 (Order No. 69), *see also* 45 Fed. Reg. 12,214 (1980).

can become “qualifying facilities” (“QFs”), and thus become eligible for the rates and exemptions established in accordance with Section 210 of PURPA.

Each electric utility is required under Section 210 of PURPA to offer to purchase available electric energy from cogeneration and small power production facilities that obtain QF status under Section 210 of PURPA. For such purchases, electric utilities are required to pay rates that are just and reasonable to the ratepayers of the utility, are in the public interest, and do not discriminate against cogenerators or small power producers. FERC regulations require that the rates electric utilities pay to purchase electric energy and capacity from qualifying cogenerators and small power producers reflect the cost that the purchasing utility can avoid as a result of obtaining energy and capacity from these resources, rather than generating an equivalent amount of energy itself or purchasing the energy or capacity from other suppliers.

FERC has addressed how utilities using the DRR method should incorporate their future capacity plans. FERC Order 69 states that the evaluation of the difference between a plan with and without the QF must be done based on “the utility’s optimal capacity expansion plan,” and “[a]n optimal capacity expansion plan is the schedule for the addition of new generating and transmission facilities which, based on an examination of capital, fuel, operating, and maintenance costs, will meet a utility’s projected load requirements at the lowest total cost.” Federal Register, Vol. 45 No. 38, p. 12,216 n.6.

FERC delegated the implementation of these rules to the State regulatory authorities. State commissions may implement these rules by the issuance of regulations, on a case-by-case basis, or by any other means reasonably designed to give effect to FERC’s rules.

III. HEARING

The Commission convened a hearing on this matter on April 10 through 11, 2018, with the Honorable Swain E. Whitfield, Chairman, presiding. SCE&G was represented by K. Chad Burgess, Esquire, Matthew W. Gissendanner, Esquire, and Benjamin P. Mustian, Esquire. SCEUC was represented by Scott Elliott, Esquire. SBA was represented by Richard L. Whitt, Esquire, and Benjamin L. Snowden, Esquire. Southern Current, LLC was represented by Richard L. Whitt, Esquire. CCL and SACE were represented by Katie C. Ottenweller, Esquire. CMC Steel and its counsel of record did not appear at the hearing. Andrew Bateman, Esquire and Jenny R. Pittman, Esquire represented ORS. In this Order, ORS, SCEUC, SBA, Southern Current, LLC, CCL, SACE, CMC Steel, and SCE&G are collectively referred to as the “Parties” or sometimes individually as a “Party.”

Through their personal appearances, SCE&G presented the direct testimonies and exhibits of George Lippard III, Henry E. Delk, Jr., Michael D. Shinn, J. Darrin Kahl, John H. Raftery, Joseph M. Lynch, Ph.D., and Allen W. Rooks, and ORS presented the direct testimonies and exhibits of Michael Seaman-Huynh, Gaby Smith, Sarah Johnson, and Brian Horii.³ Through their personal appearances, SBA presented the direct testimony and exhibits of Ben Johnson, Ph.D, and CCL and SACE presented the direct testimony and exhibits of Devi Glick.⁴ Southern Current, SCEUC, and CMC Steel did not present witnesses at the hearing.

³ Prior to the hearing and without objection from the remaining parties, the Commission granted SCE&G and ORS permission to utilize panels for the presentation of witnesses. SCE&G Witnesses Lippard and Delk were presented in the first panel for the Company; Witnesses Shinn and Kahl were presented in the second panel; and Witnesses Raftery, Lynch, and Rooks were presented in the third panel. ORS Witnesses Seaman-Huynh and Smith were presented in the first panel; Witnesses Johnson and Horii were presented in the second panel.

⁴ The Parties stipulated into the record the testimony and exhibits of CCL and SACE Witness Glick.

In response to the direct testimony of ORS Witness Seaman-Huynh, SCE&G presented the rebuttal testimony and exhibits of Witness Rooks. In response to the direct testimony of ORS Witness Horii, SBA Witness Johnson, and CCL and SACE Witness Glick, SCE&G presented the rebuttal testimony and exhibits of Witness Lynch. ORS filed surrebuttal testimony and an exhibit of Witness Horii, SBA filed surrebuttal testimony of Witness Johnson, and CCL and SACE filed surrebuttal testimony and exhibits of Witness Glick.

IV. REVIEW OF EVIDENCE AND EVIDENTIARY CONCLUSIONS

The parties presented evidence on the following contested topics: calculation of avoided costs and the 2018 distributed energy resource valuation update.

A. AVOIDED COSTS

SCE&G Witness Joseph M. Lynch testified to the Company's methodology for calculating the long-run avoided costs for power purchases under PURPA, the results of which are set out in revisions to PR-2 as proposed by the Company. Witness Lynch also described the Company's update to its short-run avoided costs, set out in revised PR-1 as proposed by the Company. Witness Lynch testified on cross examination that the majority of qualifying facilities under PURPA in the Company's territory for the near future are expected to be solar photovoltaic projects. The parties presented evidence on the following topics related to avoided cost: SCE&G's avoided capacity methodology; SCE&G's 2018 Integrated Resource Plan ("IRP") and its associated load forecast, reserve margin, and resource plan; and SCE&G's avoided energy methodology.

a. Avoided Capacity Methodology

i. SCE&G Testimony

Witness Lynch explained that the Company uses a Difference in Revenue Requirements (“DRR”) method to determine the long-run avoided costs of the Company over its 15-year IRP. The DRR method involves comparing the Company’s revenue requirements between a base case and a change case. The base case is defined by SCE&G’s “existing fleet of generators and the hourly load profile to be supplied by these generators.” Lynch Direct Testimony at 4. “The change case is the same as the base case except that the hourly loads are reduced by a 100 MW profile. . . .” Lynch Direct Testimony at 4.

Witness Lynch explained the Company’s approach to calculating avoided costs. The Company calculates the change in production costs between the base case and the change case using PROSYM, a computer program that models the “commitment and dispatch of generating units to serve load hour-by-hour . . .” Lynch Direct Testimony at 5. The avoided capacity cost is the “difference between the incremental capacity costs in both its base resource plan and the change plan.” *Id.* The Company’s long-run avoided costs are calculated over the 15-year planning horizon from 2018 to 2032. *Id.* The Company’s short-run avoided costs are calculated for the period between May 2018 and April 2019.

Witness Lynch further explained the Company’s approach to calculating avoided capacity costs under its DRR method. The Company uses the resource plan from its latest IRP or an updated resource plan to calculate “the incremental capital investment related revenue required to support the existing resource plan.” Lynch Direct Testimony

at 14. The Company then “derives a change case in its resource plan by considering the impact of a QF purchase from a 100 MW solar facility.” *Id.*

Witness Lynch testified that SCE&G performed a new Reserve Margin Study in 2017. Based on the results in that Study, SCE&G has set a 14% summer peak reserve margin and a 21% winter peak reserve margin. Lynch Direct Testimony at 6. In addition, Witness Lynch testified that SCE&G performed a study “On Calculating the Capacity Benefit of Solar QFs,” which shows that “on more than 80% of the days during the winter months of October through March, solar has no effect on SCE&G’s daily peak demand.” *Id.* at 14-15. Witness Lynch asserted that resources have capacity value only if they are available in both the summer and winter. *Id.* at 15. Furthermore, he stated that because solar does not provide capacity during the winter period and because it has only a “small impact in summer,” the Company is “unable to avoid any of its projected future capacity needs.” *Id.* at 15-18. SCE&G therefore proposes to set the avoided capacity costs of solar for the PR-2 and PR-1 rates to zero. At the same time, Witness Lynch also testified that the 2018 IRP reports a firm capacity value of solar power at 35% for summer peaks. Hearing Tr. at E-186–189.

As described by Witness Lynch, the Company’s long-run avoided capacity cost rates dropped from \$21.34 per kW-year in 2016, to \$6.35 per kW-year in 2017, to \$0 per kW-year this year.

Finally, Witness Lynch testified that SCE&G “does not believe there will ever be enough capacity from [] small non-solar QFs to affect its resource plan and, therefore, the avoided capacity costs for PR-1 are zero.” Lynch Direct Testimony at 22. SCE&G also

proposes to eliminate credits to non-solar QFs for their contribution to “critical peak hours.” *Id.*

ii. SBA Testimony

SBA Witness Ben Johnson, Ph.D. testified that SCE&G is proposing unreasonably low avoided cost rates for QFs, which will not advance the interests of ratepayers or the public interest. He recommended that the Commission reject the Company’s proposed avoided cost rates, because they will not adequately compensate QFs, they will not encourage small power production within SCE&G’s service area, and they will not achieve the goals of PURPA. Instead, he recommended the Commission require the Company to collaboratively work with ORS and other interested parties to develop higher, more accurate QF rates.

Witness Johnson’s extensive pre-filed testimony with the Commission addressed a number of issues in detail, including: rate comparisons between the Company’s proposed avoided cost rates and those previously approved by the Commission for SCE&G and for Duke Energy; a discussion of PURPA requirements; and methodologies for estimating avoided costs. His testimony also includes independently developed estimates of the Company’s long run avoided capacity costs and energy costs; and comparisons between the Company’s proposed rates and the independently developed estimates.

Witness Johnson made recommendations for Commission action in the proceeding. Specifically related to the avoided capacity rate, he recommended that the Commission reject the Company’s proposals to reduce the capacity rate of the PR-2 tariff to zero.

iii. CCL and SACE Testimony

CCL and SACE Witness Devi Glick testified regarding shortcomings in SCE&G's avoided cost calculations offered to qualifying facilities or QFs under PURPA. According to Witness Glick, the Company's calculations fail to capture the actual avoided cost value of solar photovoltaic facilities, which are forecast to make up the vast majority of QFs for the foreseeable future.

For avoided capacity calculations, Witness Glick testified that SCE&G is using a "proposed new methodology." In prior years the Company has used a three step methodology where it: 1) calculated the avoided capacity value over a 15-year planning horizon comparing the difference in revenue requirements between the base case and the change case; 2) identified the set of critical peak hours where energy would have a capacity value on the system and spread the avoided capacity cost across those hours, assigning 80% of the annual capacity cost to the summer; and 3) calculated a single avoided cost value based on the production of a typical solar PV system. Glick Direct Testimony at 6. In contrast, in this year's docket, the Company assigns zero capacity value to solar, asserting that a resource must provide capacity in the winter and summer in order to provide any capacity value. According to Witness Glick, SCE&G artificially limited the future generation capacity projects or contracts that could be deferred or avoided by QFs; failed to include opportunity costs in its revenue requirements calculations; and failed to include a performance adjustment factor of 1.20. These problems yield an avoided capacity value that is too low.

Witness Glick testified that the Company has not, but should, account for opportunity costs in its revenue requirements calculations, which would reflect the value

the Company could collect in additional revenue by selling marginal surplus generation capacity contracts as enabled by additional renewable energy resources on the system. Based on known market transactions in the SCE&G territory, the Company should use a capacity value of \$68.62 per kW-yr in 2017, \$70.92 per kW-yr in 2018, \$72.38 per kW-yr in 2019, and the 2019 value adjusted for inflation for the year 2020 and beyond. Glick Direct Testimony at 20. Failing to account for these opportunity costs artificially depresses the value of avoided capacity according to Witness Glick.

Finally, Witness Glick recommended that the Company include a performance adjustment factor (“PAF”) of 1.20, which correlates to availability of the QF resources of approximately 83.3 percent. *Id.* According to Witness Glick, the PAF ensures that a QF resource is treated in a nondiscriminatory manner when compared to utility-owned resources. Utility-owned resources are considered “used and useful” despite their occasional downtime or failure to deliver energy or capacity when called upon.

iv. ORS Testimony

Witness Brian Horii testified on behalf of ORS related to the Company’s avoided cost calculations. ORS retained Witness Horii from E3 Consulting to review the following:

- 1) Verify the Company is using the avoided cost methodology approved by the Commission;
- 2) Confirm the methodology meets the Public Utility Regulatory Policies Act of 1978 (“PURPA”) Requirements; and
- 3) Verify the avoided cost rates requested by SCE&G in this Docket are a reasonable result of the approved avoided cost methodology.

Witness Horii provided an overview of PURPA and a description of the Company’s DRR approach to calculating avoided costs.

Witness Horii testified that the Company has made a “dramatic change” in its approach by not providing any calculations of avoided capacity costs. Horii Direct Testimony at 8; *see also id.* at 10 (“Rather than simply updating inputs used to estimate the avoided capacity cost, SCE&G introduced a new concept of 100% winter capacity constraints as the basis for not calculating any avoided capacity cost.”); *id.* at 21 (“SCE&G bases its assertion of zero avoided capacity cost for solar projects on SCE&G being constrained by winter capacity needs, and unaided by summer capacity reductions. This is a substantial change from the methodology and inputs used by SCE&G to calculate prior PR-1 and PR-2 rates[.]”). Witness Horii testified that the Company asserts that new solar projects will not provide any capacity reductions so the Company does not provide any calculations for such projects, and he further testified that the Company failed to provide any calculation of avoided capacity costs for non-solar projects despite a request from ORS. Horii Direct Testimony at 9.

Witness Horii recommended that SCE&G’s position of zero avoided capacity costs be rejected at this time because SCE&G has “not adequately demonstrated that winter capacity needs are the same or greater than summer capacity needs.” *Id.* at 9. As detailed below, Witness Horii believes that SCE&G is relying on questionable “assumptions and studies conducted in the 2018 IRP.” *Id.* at 22. For the time being, he recommends that the PR-2 capacity value be set at “19.5% of the avoided cost of per kW from a 100 MW change to SCE&G’s base resource plan that excludes any non-committed future resources and reflects any planned plant retirements of firm capacity.” *Id.* Applying the 19.5% factor would have resulted in an avoided capacity cost for solar

of \$4.16/kW-yr. He recommended that SCE&G be required to provide an estimate of long-run avoided capacity cost and the calculation for the long-run avoided capacity costs. Finally, he recommended that SCE&G continue to provide a standard published PR-2 rate for non-solar resources.

b. Integrated Resource Plan Reliance; SCE&G's Load Forecasting, Reserve Margin Study, and Resource Planning.

i. SCE&G Testimony

Witness Lynch testified that SCE&G's avoided capacity results are influenced by inputs from the Company's 2018 IRP and underlying studies, including a new Reserve Margin Study in 2017 that sets a 21% winter peak reserve margin. Lynch Direct Testimony at 6. Witness Lynch acknowledged in cross-examination that this new reserve margin policy will increase costs for SCE&G's customers. Hearing Tr. at E-241. SCE&G's Reserve Margin Study utilizes the "component method." The Component method adds together estimated peak variation from weather with variation in supply capacity to determine the total reserve MWs. Totals are calculated separately for the summer and winter seasons and divided by the summer and winter peak loads to arrive at reserve margin percentages.

The decrease in the avoided capacity rates paid to qualifying facilities is partly attributable to decreases in the amount of avoidable capacity in the Company's 2018 resource plan. Witness Lynch described several changes in the 2018 IRP that have impacted the Company's "base" resource plan and reduced the Company's proposed avoided capacity rates: the 2018 IRP shows the Company planning to acquire a 504 MW natural gas combined unit in 2018 and a 540 MW natural gas combined unit in 2023. Witness Lynch testified that the IRP is subject to change. Direct Testimony at 7, Hearing

Tr. at E-25. Witness Lynch also testified that the 2018 IRP relied upon by the Company for its DRR calculations of avoided costs was not submitted to the Commission for review and public comment until after the proposed Avoided Cost rates were submitted in this proceeding, and has not been approved by the Commission.

The Company also concedes that it uses a simple spreadsheet model to compare generation resources in its IRP. Hearing Transcript at pp. E-211-212, p. E-212 at ln. 24-25. The Company does not use any optimization software or sophisticated modeling that could integrate various resources and select the optimal, least cost generation resources to meet future needs. *Id.*

The Company's spreadsheet only actually analyzes two resource options for meeting capacity needs in 2023: a peaking turbine and a combined cycle plant. Hearing Tr. at p. E- 215-216. In response to a cross examination question about the Company's spreadsheet model, Witness Lynch states that "I think the heart of your point is, are you really moving around just combustion turbines and combined-cycles, and I'd say yes." *Id.* at E-215 ln. 24 – E-216 ln. 1. The Company did not compare the cost effectiveness of these gas resources to market purchases of power, solar, energy efficiency, or battery storage. For some of these resources, the Company "baked in" a certain, pre-set amount (such as for winter DSM), but does not allow these resources to compete on cost against its selected 540 MW combined cycle. *Id.* The Company would also likely seek recovery of not only capacity costs related to these self-built generation additions, but also a guaranteed return on equity. *Id.* at p. E-217, ln. 8.

ii. SBA Testimony

Witness Johnson recommended rejecting the Company's proposal to base rates on a sub-optimal "Base" expansion plan that does not minimize revenue requirements. Johnson Direct Testimony at 40, 69-70; Surrebuttal Testimony at 8. In particular, he pointed out that SCE&G has not included additional Demand Side Management or power purchases that are specifically targeted at unusually cold winter mornings: "Because the 'Base' expansion plan excludes or ignores these types of opportunities (as with the modeling that was done in this proceeding), the avoided costs that are calculated using the DRR method will be underestimated." Johnson Surrebuttal Testimony at 12.

iii. SACE and CCL Testimony

Witness Glick testified that the Company's proposed winter reserve margin is substantially higher than peers Duke Energy Carolinas, Duke Progress, Southern Company, and Santee Cooper, each of which use a winter reserve margin between 12 and 17 percent. Glick Direct Testimony at 9. The Company looked solely on the relationship between load and weather to calculate the winter reserve margin. *Id.* at 10. By contrast, peer utilities utilize a more comprehensive methodology that balances physical reliability and customer costs. *Id.* at 11. Witness Glick recommends that the Commission require SCE&G to hire an independent firm to conduct an analysis to determine an appropriate reserve margin for both winter and summer. This study should utilize a methodology that balances physical reliability with minimizing economic costs to the customers. While that study is performed, the Commission should reject the Company's use of a 21% reserve margin and require SCE&G to use its historic 14 percent reserve margin.

Similar to Witness Johnson, Witness Glick criticized the Company's incorporation of a proposed 540 MW combined cycle plant in 2023 into its avoided cost calculations. She testified that this is particularly inappropriate because the Company has not tested a range of scenarios; has not modeled the cost of its resource plan; and has not allowed DERs to compete with or displace the CC or other higher cost resources. Glick Direct Testimony at 13. Instead, SCE&G has developed a future resource plan that is premised on an inflated reserve margin and on the assumption that the utility's system will continue to be winter peaking. If SCE&G's reserve margin were 17%—a conservative margin compared to that of peer utilities—new large capacity additions could be delayed at least a year and a half. Overall costs to ratepayers under this scenario, Witness Glick testifies, “should be lower than under SCE&G's proposed avoided cost rates.” Glick Surrebuttal Testimony at 9.

Witness Glick recommended that the Commission require SCE&G to complete a proper reserve margin study, to be finished in time for the 2019 IRP. The Commission should also require that SCE&G complete a new capacity expansion plan using last year's reserve margin of 14 percent. Glick Direct Testimony at 13-14.

iv. ORS Testimony

Witness Horii took issue with SCE&G's reliance on an unreviewed, unvetted, and unapproved 2018 IRP. Horii Direct Testimony at 21. He expressed particular concerns about SCE&G's utilization of the “component method” to inform its Reserve Margin Study, implementation of that method, and inconsistent load forecast.

Witness Horii stated that the component method is “not an industry standard approach.” Horii Direct Testimony at 12. Witness Horii testified that, while the

component method has been used by the Company historically and may have produced consistent results when the reserve margin methodology was not used to determine the difference in reserve margin requirements between the summer and winter season, “it is unclear if the component methodology is appropriate” for this purpose. Horii Surrebuttal Testimony at 9. He stated that the Loss of Load Expectation, Loss of Load Probability, and Expected Unserved Energy methods are commonly accepted in the industry. *Id.* at 10.

Witness Horii went on to discuss why, setting aside whether the component method is appropriate, SCE&G’s implementation of the method overstates winter peak demand variation (also termed “demand side risk”) and therefore also raises questions about the Company’s zero avoided capacity claim. In particular, Witness Horii testified to his belief that: 1) the regression equations SCE&G used to estimate peak demand today given historical peak days are incorrect and produce results that are contrary to engineering-based expectations, Horii Direct Testimony at 12-18; 2) the reserve margin threshold should be applied to forecasts of average annual peaks rather than maximum annual peaks because the risk of higher peaks is already embedded in the threshold percentage (since it is the difference between the average annual peak and the maximum annual peak), Horii Direct Testimony at 19-21; Horii Surrebuttal Testimony at 15; and 3) there are likely “other changes that should also be applied[,]” Horii Direct Testimony at 21. While these errors “appear to be relatively small in isolation,” they add up when combined together and call SCE&G’s winter capacity constraint assertions into doubt. Horii Surrebuttal Testimony at 5. Witness Horii testified that “there will be some number

of years over the next fifteen years where summer will be the driver of capacity need.”
Id. at 6-7.

Finally, Witness Horii noted that SCE&G’s winter load forecast and peak values appear inconsistent and inexplicably high. Witness Horii stated that SCE&G’s gross peak demand forecasts “are higher than what normal loads should be given typical 1% per year growth rates since 2016.” Horii Direct Testimony at 10; *see also* Direct at 10 - 11 (“I also believe the Company is forecasting summer and winter peak demands for future years in an inconsistent manner that creates a potentially false indication of higher capacity need for the winter season.”) He noted that the Company’s estimated gross territorial peak of 5,024 MW for winter 2018 is 388 MW higher than the winter 2017 forecast and 256 MW higher than the actual 2017 winter peak, despite the fact that average growth over last four years has been 36.25 MW per year and the highest growth between years was 106 MW between 2014 and 2015. Horii Surrebuttal Testimony at 8.

c. Avoided Energy

i. SCE&G Testimony

The avoided energy cost is the “difference between the base case costs and the change case costs.” Lynch Direct Testimony at 5. The avoided energy costs are then “accumulated into four time-of-use periods” for on-peak and off-peak seasons and on- and off-peak hours. *Id.* at 5. The PROSYM results are adjusted for line losses, working capital impacts, gross receipts taxes, and generation taxes. *Id.* at 23.

SCE&G is proposing to limit its PR-2 Rate to solar QFs only and to update its PR-2 Rate going forward only on an “as needed” basis rather than twice a year. *Id.* at 7. This change is based on a study entitled “Avoided Energy Cost Methods Study for Solar

QFs,” which Witness Lynch claimed indicates that the benefits of each additional solar generation facility diminish as more solar generation facilities are interconnected. For this reason, SCE&G is no longer using a “round-the-clock” methodology to subtract 100 MWs every hour of the base case load profile and then use four time-of-use periods with peak and off peak seasons and peak and off-peak hours within each season to derive four avoided energy costs. *Id.* at 8-9. Instead, the Company is proposing to use a “solar methodology” to subtract a 100 MW solar profile from the base case. As a result of this change, the Company proposes to reduce avoided energy costs by \$4.85 per MWh. *Id.* at 10-13.

SCE&G also proposes to offer separate rates for solar and non-solar QFs in its PR-1 Rate. *Id.* at 7, 21. For non-solar QFs, the change case will be derived from the base case by subtracting a 100 MW round-the-clock power purchase profile. *Id.* at 21. Each QF will be paid based on how much energy it produces in each of four time-of-use periods.

ii. SBA Testimony

Witness Johnson asked that the Commission reject the Company’s proposals to reduce energy rates despite circumstances where heat rates have increased; remove time-related price signals; and eliminate standard offer rates for non-solar generators larger than 100 kW. He testified that the Company’s proposal to base rates on a single generic solar profile is inadequate because it does not “precisely match QF rates to avoided costs” or “ensure greater fairness to different types of generators.” Johnson Direct Testimony at 93; *see also* 92-94.

iii. CCL and SACE Testimony

For avoided energy calculations, Witness Glick reiterated her position that the Company's reserve margin is too high and that this has "allowed the company to plan away any generation shortfalls that could be more cost-effectively met with PV or other lower cost resources without explanation." Glick Direct Testimony at 13. She recommended that the Commission require SCE&G to complete a new reserve margin study and new capacity expansion plan. *Id.* at 13-14.

iv. ORS Testimony

Witness Horii determined that the method used by SCE&G to calculate avoided energy costs is consistent with the methodology approved by the Commission. He stated that SCE&G's shift to a solar profile for the change case is an improvement over the prior method. There were not significant changes made to SCE&G's avoided energy model inputs between 2017 and 2018. He determined that the avoided energy costs presented by the Company were a reasonable and consistent result of the methodology used by SCE&G.

d. The Commission's Conclusions Regarding Avoided Costs

The Company's avoided costs proposed in this docket are not just and reasonable, and must be revised prior to approval. The Company has used a DRR method to calculate its avoided cost available to QFs through its PR-1 and PR-2 rates. The value of avoided energy and capacity calculated through the DRR method is largely dependent on the Company's latest Integrated Resource Plan or updated resource plan; the 2018 IRP is currently under consideration by the Commission. The estimated revenue requirement

associated with the Company's IRP partly depends, in turn, on the Company's latest Reserve Margin Study.

ORS Witness Horii and CCL and SACE Witness Glick particularly point to a number of errors and omissions related to the avoided capacity component of the Company's proposed avoided costs. Both Witnesses testify that the Company has dramatically changed its approach to calculating avoided capacity by refusing to provide a capacity payment based on the assertion that its system is winter capacity constrained and that a resource must provide capacity in the winter and summer in order to avoid the Company's capacity costs. The Commission finds that the testimonies of witnesses Horii and Glick are credible on these points and are a key reason that the Company's proposed avoided cost calculations should be revised.

The Commission agrees with Witnesses Glick and Horii that the Company has not met its burden to demonstrate that a capacity payment of zero is justified at this time. The Commission agrees with Witness Horii that the Company should recalculate capacity costs, using 19.5% of the avoided cost of per kW from a 100 MW change to SCE&G's base resource plan that excludes any non-committed future resources and reflects any planned plant retirements of firm capacity.

The Commission also agrees with Witness Glick that the Company has failed to account for opportunity costs and failed to include a performance adjustment factor.

With respect to the Company's 2018 IRP, the Commission agrees with Witnesses Glick and Horii that the Company's reliance on the generation additions in its 2018 IRP as a foundation for its avoided cost rates is unreasonable, without further evidence that these resource additions have been deemed least cost and constitute actual commitments.

The Commission finds that avoided cost rates should not include as unavoidable capacity any speculative future capacity additions. Further, the Commission finds that PURPA requires the Company to optimize its “base case” capacity expansion plan that it uses to develop avoided cost rates, giving fair and reasonable consideration to alternative means of meeting capacity needs besides adding Company-owned generation. *See* Federal Register, Vol. 45 No. 38, p. 12,216 n.6.

With respect to the Company’s Reserve Margin Study, the Commission agrees with Witnesses Glick and Horii that the Company has not met its burden to demonstrate that its winter peak load forecast and 21% winter reserve margin are reasonable and justified. As recommended by other parties, the Company’s reserve margin study should use an updated winter peak load forecast and should be redone using a more widely adopted tool, one that balances risk and ratepayer costs, which can be used to inform avoided cost rates in the 2019 fuel cost filing. In the interim, it is reasonable for the Company to retain its 2017 reserve margin of 14 percent.

Concerning PR-2 rates for non-solar QFs, the Commission agrees with SBA Witness Johnson that the Company has not demonstrated that it is appropriate to eliminate its technology-agnostic PR-2 rate. Further, the PR-2 rate, as proposed, does not incentivize energy storage technologies that could increase solar resources’ value to the Company’s system.

B. 2018 UPDATE TO NEM METHODOLOGY CALCULATIONS

a. SCE&G Testimony

SCE&G Witness Joseph Lynch, Ph.D. provided in his direct and rebuttal testimony proposed values for the Company’s 2018 update to the Net Energy Metering or

NEM Methodology for valuing the costs and benefits of Distributed Energy Resources (“DERs”). For the DER value for the current period and the IRP Planning Horizon (15-year levelized), Witness Lynch provided non-zero values for the following four categories (out of eleven within the NEM Methodology): avoided energy costs, avoided criteria pollutants, avoided environmental costs, and an adjustment for line losses.⁵ See Lynch Direct Testimony at pp. 26-27, Rebuttal Testimony pp. 32-33. The avoided energy value was lowered for 2018 and the avoided capacity value was zeroed out, reflecting the Company’s proposal to reduce its PURPA avoided energy payments and eliminate avoided capacity payments in 2018.

Beyond avoided capacity, the Company proposed zero values for several additional categories in its 2018 update. For ancillary services, Witness Lynch asserted that there would be some increased costs to providing ancillary services as larger amounts of solar energy come online, but that for now the relatively small amount of NEM DERs do not warrant a non-zero value for this category. For avoided transmission and distribution capacity, Witness Lynch asserted that NEM DERs do not avoid transmission or distribution capacity because solar is an intermittent resource and therefore the value of this component should be zero. For avoided CO₂ pollutants, Witness Lynch sets the value at zero until state or federal laws or regulations result in an avoidable cost on utility systems for these emissions. For fuel hedge, Witness Lynch states that the Company does not hedge fuels for electric generation so this value is zero. Witness Lynch explains that utility integration and interconnection costs as well as administrative costs are currently being collected by the Company through a DER rider,

⁵ The Company separated out avoided criteria pollutants and avoided environmental costs from the avoided energy costs.

so these values are zero for purposes of the NEM Methodology. For environmental costs, Witness Lynch asserts that there are no environmental costs not already included in other specific components of the Methodology. In rebuttal testimony, Witness Lynch states that SCE&G pulled out the environmental costs for lime and ammonia and the net profit resulting from SCE&G's sale of coal ash to comply with Commission Order 2017-246 at 39 to "address the cost-effectiveness of separately accounting for environmental costs." Witness Lynch concludes that "the time and resources necessary to separately account for these environmental costs do not result in any additional benefit to the NEM methodology." Lynch Rebuttal at 32-33.

SCE&G Witness Allen W. Rooks asks in his direct testimony that the Commission approve the Company's proposed updates to its NEM Rider.

b. CCL and SACE Testimony

CCL and SACE Witness Devi Glick provided input through testimony on the Company's 2018 Net Energy Metering ("NEM") Methodology for valuing the costs and benefits of DERs. She specifically recommended that the Company make further progress in filling out and applying the NEM Methodology previously approved by the Commission, and she disagreed that some of the values should be zero as proposed by the Company.

Witness Glick noted that the recommendations made for the Company's avoided cost calculations under PURPA influenced the Company's avoided energy and capacity rates in the NEM Methodology and should be corrected accordingly to fully account for the value of solar photovoltaic resources, which are expected to make up the vast majority of DERs in South Carolina for the near future.

Witness Glick testified that avoided transmission and distribution (“T&D”) value of DERs is one example of a category in the NEM Methodology that is readily quantifiable and calculated in other proceedings. The avoided T&D component refers to DERs’ contribution to deferring or avoiding the addition of transmission and/or distribution capacity resources needed to serve load. Witness Glick testified that the Company can and should include a non-zero value for avoided T&D in this year’s annual update to the NEM Methodology application. Her testimony emphasized that in the aggregate and over time, DERs reduce the need for T&D capacity investments. “If the DERs alleviate some of the strain on the system during transmission or distribution system peaks, then those resources do, in fact, reduce pressure on the system and therefore help to defer or avoid future upgrades to that system.” Glick Direct at 23. For comparison, Witness Glick provided numerical examples of avoided T&D values that were the result of a survey of avoided costs of T&D for use in energy efficiency program screening and pointed to other jurisdictions that have value of solar studies including avoided T&D values. She noted that most of the avoided T&D values are between \$25 and \$75 per kW-year. Witness Glick also provided in testimony descriptions of different approaches to calculating avoided T&D values from other jurisdictions. Witness Glick notes that these examples show that avoided T&D is a category within the NEM Methodology that is “quantifiable” at this time, and should thus be included in the Company’s NEM Methodology application.

Witness Glick also testified that she disagreed with the Company’s conclusion that “at present, there are no environmental costs that are not already included in other specific components of the methodology.” Glick Direct Testimony at 31. Witness Glick

provided the example of compliance with federal rules regulating coal combustion residuals. Witness Glick asserted that DERs can help to avoid those costs and that those costs are “financial, quantifiable, and a direct result of DER generation” and such savings should be reflected in the NEM Methodology Application.

Finally, Witness Glick testified that there are a number of corrections the Company should make to its avoided line loss calculations. Witness Glick made the following specific recommendations:

1. SCE&G should use not use straight average annual line losses, but instead use average annual T&D losses weighed to a PV profile to account for solar PV output’s correlation with higher load, and therefore higher losses.
2. SCE&G should recognize that marginal transmission line losses, like marginal distribution line losses, are double the average line loss.
3. SCE&G should gross up avoided generation and transmission capacity calculations assigned to distribution-level DERs and QFs to reflect the avoided generation and transmission capacity otherwise needed to overcome line losses.
4. SCE&G should recognize that, in addition to the avoided generation and transmission capacity associated with overcoming line losses, the associated 21 percent reserve margin assigned to the generation capacity is also avoided. As such, that too should be reflected in avoided generation capacity calculations assigned to distribution-level DER and QF resources.

Glick Direct Testimony at 31.

c. ORS Testimony

ORS Witness Sara W. Johnson testified about the Company’s DERP costs related to the Company’s NEM Methodology update. Witness Johnson testified that SCE&G’s calculation of the NEM incentive is consistent with Docket No. 2014-246-E. However, she noted that when updating the value of DER, the Company reduced the avoided capacity to zero. ORS Witness Horii testified that the Company made “significant” changes to the avoided energy cost and avoided capacity cost component line items. Horii Direct at 23. As noted above, Witness Horii recommended that the Commission

reject the Company's proposed PURPA avoided capacity cost values in favor of higher values. This would increase the NEM DER avoided energy and avoided capacity cost values since they are based on PURPA avoided capacity cost values.

Witness Horii also testified that, while SCE&G's use of a zero value for seven of the other components of the NEM DER is "reasonable" and consistent with the methodology approved by the Commission in Order No. 2015-194, SCE&G's approach is "conservative" in certain respects. Horii Direct at 23. For example, Witness Horii observed that other jurisdictions do recognize the value NEM resources can provide in deferring T&D investments and in avoiding CO₂ emissions. On cross examination, Witness Horii discussed a quantification of both T&D value and ancillary services value that he conducted for California's investor-owned utilities in 2016.

d. The Commission's Conclusions Regarding 2018 Update to DER Valuation

The Commission finds that the Company's 2018 NEM Methodology values are both incorrect and incomplete. The avoided energy and avoided capacity values are incorrect because they are impacted by the Company's calculations of avoided energy and avoided capacity calculations pursuant to PURPA. The Company must correct its avoided energy and avoided capacity calculations as described in the ordering paragraphs below and in Section IV.A.d above. The Company also must correct its avoided capacity calculation in order to comply with the Value of Solar methodology agreed to by parties in the settlement in Docket No. 2014-246-E, which defines "avoided capacity" as the increase or reduction in fixed costs to the utility "of building and maintaining new conventional generation resources associated with the adoption of NEM." Order 2015-194 at p. 8. The Company's error of assigning net-metered DERs a zero capacity value is

inconsistent with a plain reading of the settlement because it means that these resources have no ability to avoid new capacity.

The Company's 2018 NEM Methodology values are also incomplete. The NEM Settlement Agreement approved previously by this Commission in Order No. 2015-194, Docket No. 2014-246-E, states that the Company shall compute and update annually the "costs and benefits of net metering and the required amount of the DER NEM Incentive" coincident in time with the Utility's filing under the fuel clause. Order 2015-194 at p. 22, para. (g). The NEM Methodology includes eleven components, including but not limited to "T&D Capacity" and "Environmental Costs." The Company is authorized to use placeholders for some categories "where there is currently a lack of capability to accurately quantify a particular category and/or a lack of cost or benefit to the Utility system." Order 2015-194 at p. 20, para. (e), Ex. 1 at p. 4, para. 8. Placeholder categories are to be "updated and included in the calculation of costs and benefits of net metering if and when capabilities to reasonably quantify those values and quantifiable costs or benefits to the Utility system in such categories become available." *Id.*

The Company asserts that avoided T&D is not capable of quantification at this time. However, Witness Glick provided in her testimony nearly 40 examples of avoided T&D values that have been used in other contexts and jurisdictions. Witness Horii affirmed that T&D values have been calculated in other jurisdictions. Based on the examples from other jurisdictions and other contexts, the Commission finds that avoided T&D capacity can and should be calculated at this time. The Company should commission an independent study to quantify T&D values and should include non-zero values in the Company's 2019 NEM Methodology application update.

To the extent that avoided environmental costs are quantifiable and are not already included in the Company's calculations—for example, the avoidance of managing additional coal combustion residual as noted by Witness Glick—those should be included. The Company should continue to separate and report on any value that is otherwise incorporated into the avoided energy rates.

Finally, the Commission determines that Witness Glick's recommendations for improving the Company's avoided line loss calculations should also be taken into account and incorporated by the Company.

V. FINDINGS OF FACT

1. The Company's proposals related to Avoided Cost Tariffs PR-1 and PR-2 and the calculations used to determine the avoided cost rates were disputed in this proceeding.
2. The majority of projects potentially affected by the PR-1 and PR-2 rates in this proceeding will be solar photovoltaic projects ("solar projects").
3. Solar projects generate electricity during the day and do not generate electricity at night.
4. Solar projects generate electricity on a daily time profile that generally increases to a midday peak, and then decreases as the sun goes down. The output of solar projects with different technical characteristics and locations, however, will vary. A single project based on a single technology is, therefore, inadequate to characterize the combined grid impact of QFs generally.

5. For its Avoided Energy Calculations, the Company uses a Differential Revenue Requirement (“DRR”) methodology to calculate the revenue requirements associated with a base case without a QF, and a change case with a QF with a solar profile. This modeling approach is a change from the approach SCE&G took in Docket Nos. 2016-2-E and 2017-2-E, where the Company modeled a QF with a 100 MW generation profile for all hours (rather than a solar profile) for the change case.
6. For long-run avoided energy cost calculations, SCE&G uses the production cost model PROSYM to simulate the commitment of generating units to serve hourly load over a 15-year timeline. The base case is constructed using load forecasts and supply side resources described in the Company’s 2018 IRP. The change case modifies the base case load forecast by subtracting zero-cost energy following the profile of a 100 MW solar photovoltaic generator.
7. The Company’s 2018 IRP indicates that its summer reserve margin is 14% of summer peak demand, and that its winter reserve margin is 21% of winter peak demand. Hearing Exhibit 9, SCE&G 2018 IRP at 40. This is the first time that the Company has proposed a winter reserve margin. Lynch Rebuttal Testimony at 19.
8. The Company’s 2018 IRP shows the Company is planning to acquire a 504 MW natural gas combined cycle unit in 2018 and a 540 MW natural gas combined cycle unit in 2023, and shows a sharp increase in winter gross peak demand.

9. The Company's 2018 IRP has not been reviewed or approved, and the Company has not committed to the resource acquisitions in the plan.
10. SCE&G proposes to eliminate its PR-2 rate for non-solar resources.
11. For its Avoided Capacity calculations, the Company substantially changed its methodology and inputs from the 2017 fuel cost proceeding. The Company now asserts that resources have capacity value only if they are available in both the summer and winter, that solar does not provide capacity in the winter period, and that the avoided capacity payment for PR-2 rates is therefore zero. Other analyses show that SCE&G's winter capacity needs are not the same or greater than summer capacity needs and that incremental solar will continue to provide capacity benefits.
12. The Company assigns a 35% firm summer capacity value to solar photovoltaic resources in its 2018 IRP.
13. For its Avoided Capacity calculations, the Company failed to include a performance adjustment factor of 1.20.
14. For its Avoided Capacity calculations, the Company failed to account in its revenue requirement for the additional revenue the Company could collect by selling surplus capacity made possible by new QFs such as solar projects.
15. The Company's proposals related to its 2018 NEM Methodology calculation update and NEM Rider to Retail Rates were disputed in this proceeding.
16. The Company's calculation of NEM Methodology values for avoided energy and avoided capacity are impacted by its calculations of avoided energy and

avoided capacity calculations pursuant to PURPA and its PR-1 and PR-2 tariffs.

17. The NEM Methodology category of avoided transmission and distribution capacity is capable of quantification at this time.
18. The NEM Methodology category of avoided environmental costs is capable of further quantification at this time.
19. For Avoided Line Losses calculations, it is possible and appropriate for the Company to use marginal line losses weighted to a solar photovoltaic profile.
20. For Avoided Line Losses calculations, it is possible and appropriate for the Company to calculate marginal transmission line losses as double the average line loss, as with distribution line losses.
21. For Avoided Line Losses calculations, it is possible and appropriate for the Company to gross up avoided generation and transmission capacity calculations assigned to distribution-level DERs, including QFs, to reflect the avoided generation and transmission capacity otherwise needed to overcome line losses.
22. For Avoided Line Losses calculations, it is possible and appropriate for the Company to account for avoidance of the reserve margin percentage assigned to generation capacity in calculating avoided line losses.

VI. CONCLUSIONS OF LAW

After hearing the evidence and testimony of the witnesses, the Commission finds and concludes that SCE&G's requests pursuant to S.C. Code Ann. § 58-27-865 and PURPA Section 210 regarding its avoided cost rates offered in PR-1 and PR-2 and its

2018 NEM Methodology calculation update are not reasonable or prudent as proposed, given the evidence introduced by CCL and SACE in the expert testimony of Devi Glick, evidence introduced by SBA witness Ben Johnson, Ph.D, and evidence introduced by ORS witness Brian Horii. SCE&G's fuel cost recovery and DERP cost recovery may be approved as reasonable and prudent if subject to certain conditions specifically relating to the Company's calculations of avoided costs under PURPA and its application of the NEM Methodology approved in Commission Order No. 2015-194.

IT IS THEREFORE ORDERED THAT:

1. The following are approved:
 - a. The Company's fuel purchasing practices and cost recovery for the Review Period;
 - b. The Company's DERP expenses for the Review Period;
 - c. The Company's Tariff sheet entitled "Adjustment for Fuel and Variable Environmental Costs".
2. The following are not approved as proposed by the Company, and are subject to conditions in Ordering paragraphs 3-4 below:
 - a. The Company's Avoided Cost Tariffs PR-1 and PR-2; and
 - b. The Company's 2018 NEM Rider to Retail Rates.
3. The Company shall make the following revisions to its Avoided Cost methodology and calculations pursuant to state law and PURPA, and shall file within 90 days of this order revised PR-1 and PR-2 tariffs with rates reflecting such changes. Any fuel clause adjustments needed to account for such changes will be made in the 2019 fuel clause proceeding.

- a. For its Avoided Capacity Calculations, the Company shall:
 - i. Recalculate capacity costs consistent with the recommendation of ORS Witness Horii, using 19.5% of the avoided cost of per kW from a 100 MW change to SCE&G's base resource plan that excludes any non-committed future resources and reflects any planned plant retirements of firm capacity;
 - ii. Include a performance adjustment factor of 1.20; and
 - iii. Include the additional revenue the Company would collect by selling marginal surplus generation capacity contracts made possible by the new qualifying facilities in the revenue requirement calculation.
- b. With respect to the Company's 2018 IRP and reserve margin study, the Company shall:
 - i. Not include as unavoidable capacity any speculative future capacity additions in its calculation of avoided costs;
 - ii. Demonstrate that it has optimized its "base case" capacity expansion plan that it uses to develop avoided cost rates, giving reasonable consideration to alternative means of meeting capacity needs besides adding Company-owned generation;
 - iii. Conduct a new reserve margin study using an updated winter peak load forecast and should be redone using a more widely adopted tool, one that balances risk and ratepayer costs, and which will be used to inform avoided cost rates in the 2019 fuel cost filing. In the

interim, the Company shall retain its 2017 reserve margin of 14 percent and shall not adopt a 21 percent winter reserve margin.

- c. With respect to its PR-2 rate, the Company shall:
 - i. File a generic, technology-agnostic PR-2 rate for approval by the Commission in the current docket; and
 - ii. Include a solar + storage rate that reflects hour-by-hour, day-by-day avoided cost rates in its next annual fuel cost filing.
- 4. The Company shall make the following revisions to its 2018 NEM Methodology Calculation update, and shall file within 90 days of this order a revised 2018 NEM tariff reflecting such changes. Any fuel clause or DERP cost recovery adjustments needed to account for such changes will be made in the 2019 fuel clause proceeding.
 - a. The Company shall incorporate into its 2018 NEM Methodology Application the changes required to its PURPA Avoided Cost Calculations for avoided energy and avoided capacity as established above in Ordering Paragraph 3.
 - b. For its Avoided Line Losses calculations, the Company shall:
 - i. Use average annual transmission and distribution line losses weighed to a solar photovoltaic profile;
 - ii. Calculate marginal transmission line losses as double the average line loss, as with distribution line losses;
 - iii. Gross up avoided generation and transmission capacity calculations assigned to distribution-level DERs, including QFs, to

reflect the avoided generation and transmission capacity otherwise needed to overcome line losses; and

- iv. Account for avoidance of 14 percent reserve margin assigned to generation capacity in calculating avoided line losses.
 - c. The Company shall commission an independent study of the transmission and distribution benefits of solar QFs and file it prior to its next avoided cost filing so that it can include in its 2019 NEM Methodology application a non-zero value for the Avoided Transmission and Distribution cost component of the NEM Methodology approved in Commission Order 2015-194.
 - d. The Company shall evaluate and include in its 2019 NEM Methodology application a non-zero value or estimate for the Avoided Environmental cost component, including any avoided costs related to complying with the federal coal combustion residuals rule, of the NEM Methodology approved in Commission Order 2015-194.
5. This Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

Swain E. Whitfield, Chairman

ATTEST:

Comer H. Randall, Vice Chairman